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SEGREGATED CONTAINER FOR HOLDING MULTIPLE SUBSTANCES

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

[0001] The present invention generally relates to containers and, more particularly, toward containers having plural segregated compartments.

DESCRIPTION OF RELATED ART

[0002] Containers having segregated compartments are known in the art. Such containers include those having an inner container and an outer container, wherein the inner container has a rim that rests on the mouth of the outer container.

[0003] For example, U.S. Patent No. 5,950,689 teaches a baby bottle assembly having an outer bottle, an inner bottle, and a sealing assembly. The outer bottle includes an open mouth, and the inner bottle has a flange or rim that rests on the open mouth of the outer bottle. The sealing assembly includes a nipple base that is compressed between a sealing nut and the outer bottle mouth and the inner bottle rim. In use, the nipple and sealing nut are removed from the outer bottle, the inner bottle is taken out of the outer bottle and the contents of the inner bottle is poured into the outer bottle. Thereafter, the nipple and sealing nut are reinstalled on the outer bottle.

[0004] U.S. 6,059,443 teaches a method for mixing and storing two substances in a container, wherein the container includes an outer bottle and an inner bottle that are

affixed to one another by means of a plurality of support arms. The arms extend between a lip of the outer bottle and the lip or rim of the inner bottle. Hence, the inner bottle is affixed to the outer bottle and cannot be removed therefrom. The construction of the '443 bottle permits shipping of two different materials in the outer bottle, and subsequent mixture of the materials within the outer bottle following removal of a seal.

[0005] U.S. 3,459,295 teaches another container having a pair of segregated compartments. A cap seals the individual compartments. It is noted that the compartments cooperate to define a unitary structure insofar as the inner compartment is not removable from the container.

[0006] There exists a need in the art for a method and device for shipping different substances in a single container, wherein the different substances may be separately accessed by the user. There further exists a need in the art for a method and device whereby dry substances may be shipped in a container holding a liquid, without being damaged or moistened by the liquid.

SUMMARY OF THE INVENTION

[0007] The present invention is directed toward a segregated container for holding multiple substances including an outer container, and inner container, a sealing member, and a sealing cap. The inner container is at least partially slidably received within the outer container. The sealing member is releasably secured to an upper rim of the inner container so as to define a closed space within the inner container. The sealing cap is sealingly secured to the outer container circular rim so as to secure the

inner container within the outer container. The inner and outer containers may each contain a substance, solid or liquid, that is isolated from the other during shipment and storage, and which may be separately accessed for use.

[0008] In accordance with one embodiment of the present invention, the inner container rim extends laterally from a body of the inner container and rests upon a circular rim of the outer container. The circular rim of the outer container, in a second embodiment, has an annular recess that receives the inner container rim.

[0009] In accordance with a third embodiment of the present invention, the inner container rim is coextensive with the inner container body, and the sealing member supports the inner container on the outer container.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] These and further features of the invention will be apparent with reference to the following description and drawings, wherein:

[0011] Fig. 1 is an exploded perspective view of the assembly according to the present invention;

[0012] Fig. 2 is a cross sectional view of the assembly according to the present invention;

[0013] Fig. 3A is an enlarged cross-sectional view of a first embodiment of the present invention;

[0014] Fig. 3B is an enlarged cross-sectional view of a second embodiment of the present invention; and,

[0015] Fig. 3C is an enlarged cross-sectional view of a third embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0016] With reference to the drawings, the present invention is directed toward a container assembly 10 including an outer container 12, an inner container 14, a sealing member 16, and a sealing cap 18. The outer container 12 is preferably a conventional bottle such as is well known in the art and readily commercially available. Accordingly, the outer container 12 may be formed from glass, plastic, or any other suitable material. For example, should the outer container hold a consumable beverage, such as water, soda, beer, etc., the outer container will be formed from an appropriate material, such as glass or HDPE. On the other hand, should the outer container 12 hold a non-consumable liquid or granular substance, the outer container 12 may be formed from another conventional material that is suitable for use in conjunction with that particular liquid or substance.

[0017] The outer container 12 is generally elongated, and preferably has a flat bottom surface, a somewhat cylindrical sidewall 12a, and a neck region 12b including a circular rim 12c that surrounds the outer container opening 12d. An upper end portion of the neck region 12b may have external threads, as is known in the art, to threadably receive a threaded cap (i.e., cap member 18). Alternatively, the upper end of the neck region 12b may be free of threads so as to receive a push-on cap (i.e., cap member 18).

[0018] In the preferred embodiment, the inner container 14 is preferably elongated so as to have a test tube-like shape, as illustrated. As such, the inner container 14 has a closed bottom end 14a, a generally cylindrical sidewall 14b, and an upper end 14c. The upper end 14c has a circular rim 14d that surrounds the opening 14e formed in the inner container. The rim 14d may be slightly enlarged so as to protrude laterally from the cylindrical sidewall 14b, as shown best in Figs. 3A-3B. Alternatively, the circular rim 14d may have a diameter that is equal to the diameter of the cylindrical sidewall 14b so as to be generally coextensive with the cylindrical sidewall 14b, as shown best in Fig. 3C.

[0019] The inner container 14 will be formed from a material that is compatible with both the substance held within the inner container 14 and the substance held within the outer container 12. For example, should both containers both 12, 14 hold consumable beverages, the inner container 14 will be formed from a material that is compatible with such consumable beverages, such as glass and HDPE.

[0020] The sealing member 16 is releasably secured to the circular rim 14d of the inner container 14 so as to seal the interior of the inner container 14. The sealing member 16 cooperates with the inner container 14 so as to define a closed or isolated space within the inner container 14. The sealing member 16 is a membrane that is formed from a plastic sheet, metal foil, or another suitable material, and is releasably secured to the circular rim 14d by known means. For example, a thin film of adhesive between the circular rim 14d of the inner container 14 and the sealing member 16 may be used to releasably, yet sealingly, secure the sealing member 16 to the inner container rim 14d. It is believed that, due to the minimal thickness of the sealing

member 16, that the sealing member will not interfere with the sealing of the cap member 18 to the outer container 12. Accordingly, while it may be preferred that the sealing member 16 be essentially coextensive with the inner container rim 14d, the sealing member 16 may, instead, extend outwardly from the inner container rim 14d and at least partially cover the outer container rim 12c, as will be apparent from the following.

[0021] The sealing cap 18 has a generally circular body 18a from which a cylindrical edge 18b downwardly extends. The cylindrical edge 18b may include interior threads to facilitate threaded securement to mating threads on the outer container neck region 12b, as described previously. Alternatively, the cylindrical edge 18b may be sealingly pushed onto the neck region 12b and over the circular rim 12c of the outer container 12. The sealing cap 18 may be formed from metal, plastic, or a combination of metal and plastic, as is well known in the art. As will be apparent to those skilled in the art, the aforementioned sealing cap 18 is generally conventional and well known in the art.

[0022] When assembled, the inner container 14 is received within the outer container 12, the sealing member 16 is sealingly secured to the circular rim 14d of the inner container 14, and the sealing cap 18 is sealingly disposed over the circular rim 12c of the outer container 12. In accordance with the present invention, the particular configuration of the inner container rim 14d relative to the outer container rim 12c and the sealing member 16/sealing cap 18 may take several different forms.

[0023] In accordance with a first embodiment, which is illustrated in Fig. 3A, the inner container cylindrical sidewall 14b is slightly smaller than the opening 12d in the outer container 12 while the inner container rim 14d is slightly larger than the opening 12d

formed in the outer container 12. Accordingly, the inner container 14 is slidably received within the outer container 12 while the inner container rim 14d rests upon the outer container rim 12c.

[0024] Further, the sealing member 16 is releasably sealed to the inner container rim 14d and extends outwardly therefrom. In this regard it is noted that the sealing member 16 may be contiguous with the inner container rim 14d, so the illustrated radial extension of the sealing member from the inner container rim 14d may be considered to be optional. The sealing cap 18 may engage the sealing member 16 or may be spaced slightly therefrom. Alternatively, the sealing cap 18 may have an annular rib 18c (shown in dashed lines) to facilitate sealing engagement with the circular rim 12c of the outer container 12, either directly or via the sealing member 16 should the sealing member 16 be interposed between the cap 18 and rim 12c.

[0025] In accordance with a second embodiment of the present invention, which is shown in Fig. 3B, the radially inner portion of the outer container rim 12c has a stepped annular recess 12e. The rim 14d of the inner container 14 is received in the recess 12c such that the upper surfaces of the inner container rim 14c and the outer container rim 12c are substantially flush or coplanar. The sealing member 16 extends radially from the inner container rim 14d so as to overlie the outer container rim 12c. Alternatively, the sealing member 16 may be substantially coextensive with the inner container rim 14d. The sealing cap 18 is secured to the outer container in a conventional manner.

[0026] In accordance with a third embodiment of the present invention, which is illustrated in Fig. 3C, the inner container 14 does not include a rim that extends radially from the container sidewall. Rather, the rim 14d is coextensive with the inner container

sidewall 14b. As such, the inner container is received within the outer container 12 and the sealing member is disposed on the outer container rim 12c and serves to support the inner container 14 within the outer container 12. Alternatively, the inner container 14 may include a radially extending rim such as shown in Figs. 3A-3B wherein the radially extending rim has an outer diameter that is slightly smaller than the opening 12d in the outer container such that the inner container, including the rim, may be slidably received within the outer container 12.

[0027] Although the inner container 14 described and illustrated herein has a generally circular cross-sectional shape, it is considered apparent that the inner container 14 may have a different cross-sectional shape, such as rectangular, square, triangular, etc.

[0028] The present invention is believed to be useful in storing and dispensing many different substances. The inner and outer containers may each hold a beverage that may be either consumed separately or combined in a complimentary fashion. For example, the outer container may hold a soft drink, such as juice, water, soda, etc., and the inner container may hold an alcoholic beverage, such as vodka, gin, rum, etc. By adjusting or providing appropriate volumes in each of the inner and outer containers, a uniform, desirable mixed drink will result from mixing the contents of the inner and outer containers, either directly in the outer container or in a separate glass. In a similar fashion, the inner and outer containers may each hold soft drinks (i.e., tea and lemon juice, respectively) or alcoholic drinks (beer and whiskey, respectively).

[0029] Further, the outer container may hold a beverage, such as beer or soda, while the inner container holds a solid snack food (peanuts, pretzels, etc.) or a non-food item (cigarette, game card, message containing a fortune or advertisement, etc.).

[0030] Still further, it is contemplated that the segregated container of the present invention is useful in storing and dispensing non-food related items. For example, the outer container may hold laundry detergent (powder or liquid) while the inner container holds fabric softener. As such, a single use laundry treatment system may be provided in the container of the present invention, as may be desired in coin operated laundry facilities.

[0031] Based upon the foregoing it should be clear that numerous alternative uses for the segregated container of the present invention is contemplated, and the present invention is not to be limited to those examples specifically detailed herein. Rather, it is considered apparent that one skilled in the art, based upon the teachings of the present application, will find uses for the present invention in many different applications.